



USAID
FROM THE AMERICAN PEOPLE

ENERGY UPDATE

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Powering Economic and Social Development through Expanded Access to Modern Energy Services

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The Dominican Republic: A Test Case for Restructuring

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USAID's Weynand elected to GVEP Board of Directors.

CALENDAR

GVEP Partners Assembly.

Energy Update is published bimonthly by the Energy Team, Office of Infrastructure and Engineering, Bureau for Economic Growth, Agriculture and Trade.

Energy Team Mission Statement:

Powering economic and social development through expanded access to modern energy services.

"We power development!"

Gordon W. Weynand, Energy Team Leader, USAID/EGAT/I&E. To learn more about USAID's energy work, visit us at http://www.usaid.gov/our_work/economic_growth_and_trade/energy/

COMING NEXT ISSUE

Please submit articles for the Oct/Nov issue of Energy Update. The focus of the next issue will be the Global Village Energy Partnership (GVEP): Increasing Access to Modern Energy Services. Highlights will include a report-out on the GVEP Assembly taking place this fall in Brazil as well as GVEP partnership activities. Stories on other topics are also welcome for the feature section, and projects updates are requested for Notes from the Field.

Initial submissions must be 500 words or less in length and should include contact information. The deadline for submission of articles is **November 16, 2005**. Please e-mail your articles to the Editor Davida Wood. (dwood@usaid.gov).

Articles are accepted for publication from employees of USAID, associated organizations, and contractors.

LETTER FROM THE EDITOR

The current cycle of the United Nations Commission on Sustainable Development (CSD) is focusing on the thematic cluster that includes Energy for Sustainable Development. One of its top agenda items is to review progress on and provide policy guidance for improving access to energy services as outlined in the Johannesburg Plan of Implementation adopted in 2002. This issue of Energy Update reviews USAID experience in improving access from the perspective of sector reform.

Given that the energy sectors of many developing countries are looking to private capital to improve access to electricity, new ways must be found to encourage investors to expand beyond the lucrative, middle-to-upper class service areas so that the un-served and the underserved in poor areas may also obtain sustained access. These populations reside in peri-urban and rural areas that are not normally attractive to commercial investors. Clearly the market will only work to meet development objectives if it is designed to do so. The question arises: can regulation play a role in creating the right incentives? We asked our cooperators for their assessment of field experience on this emerging topic.

In the articles submitted, our cooperators were unanimous in the view in that market driven reforms are essential but not sufficient to deliver improved access. They argue that policies, incentives, licensing criteria and tariff structures that are specifically designed to promote access in un(der) served areas need to be in place. Each of them also raises the relationship between urban and rural access: can responsibility for both be given to a single utility? How should priorities be set? Can the regulator attend to both simultaneously?

The case of the Dominican Republic demonstrates the dangers of assigning urban, rural, and peri-urban loads to a single utility. James VanCoevering of NRECA (National Rural Electric Cooperative Association) argues that successful rural electrification programs tend to establish service providers that focus exclusively on rural areas. However, while cooperatives have filled this role in some countries, the ownership structure does not seem to be that important. Small corporate entities can be equally successful, and may even be a solution for peri-urban areas. The key lies in the power of the regulatory body to set licensing criteria and appropriate tariff structure and in its authority to monitor performance. Investment incentives such as grants, capital subsidies, and the competitive auctioning of subsidies are extensions of normal regulatory policy that are necessary to stimulate investment.

The Philippines provides an example where USAID has been assisting the newly formed Energy Regulatory Commission (ERC) to establish and effectuate such criteria. Larry Blank of Tahoe Economics and Mk Shean of International Project Services, describe what it takes to regulate SPUG (Small Power Utilities Group), the division of the government owned National Power Corporation that is responsible for electrification to off-grid areas in the archipelago. The ERC must approve both rates and subsidies for SPUG, which is also required to prioritize electrification projects and specify the criteria used for such prioritization. A competitive selection process for new power providers has been put in place.

Reform in Central America is the most mature of the cases at hand. Agustín Giménez and Jairo Gutiérrez of PA Consulting Group provide an overview of progress in Guatemala, El Salvador, Honduras and Nicaragua. Here the focus is on the creation of a special fund in order to subsidize the expansion of rural energy services by the private sector in a competitive manner. In this vision, the regulator does not take part in administration of subsidies, but nevertheless plays a key role in providing instruments that offer adequate incentives. USAID's focus has been on encouraging a transparent tariff setting process and assisting the regulator to develop quality of service rules and regulations.

An additional role for the regulator in Central America has been the design of network engineering to the needs and ability to pay of potential new customers. Since pro-poor regulatory design is under treated in the case studies, we have provided an overview of several articles dealing with this topic collected under the heading "Pro-Poor Regulatory Design and Stakeholder Participation". These focus on the information that regulators need regarding the poor and the role of civil society in helping private companies operate responsibly.

We have given the last word to Jason Czyn of NARUC (National Association of Regulatory Utility Commissioners), who sounds a wake-up call for the real world constraints facing regulators. In his view, lack of autonomy may

make it impossible for regulators to give sufficient attention to rural areas until urban challenges are met. Regulators thus need enhanced support if they are to take on the role of managing the proper utilization of resources and for ensuring the sustainability of electrification programs.

The case studies are presented in order of lessons learned about hands-off regulation (Dominican Republic) to the early stages of strengthening regulatory oversight (The Philippines) to mature alignment of roles and institutional relationships that are yielding successes (Central America). The latter case demonstrates the centrality of political will to reform if subsidies and investment priorities are to be the purview of a government ministry. Although still in its infancy, the Philippines experiment may provide a model for an independent regulator to assume this role. This case, and the topic in general, bear watching as we learn more about the role of regulation in overseeing the expansion of access.

A note on expository style: By their nature, the case studies shift in emphasis from an analytic, qualitative focus to a quantitative presentation of results. The cases are followed by generalist articles that provide broad perspectives. So, read this Special Report forward or backward, depending on your interest. Our view is that the multiple levels of analysis are in dialog with each other, and must continue to inform one another to provide policy guidance and understand the underpinnings of success.

Davida Wood
Editor, Energy Update

Special Report: The Role of Regulation in Expanding Access to Electricity

Regulatory Challenges to Increasing Access to Electric Service

It is common knowledge that over 1.6 billion people worldwide, mostly in rural areas, lack access to electricity, but not widely acknowledged that other untold hundreds of millions lack functional access. These people, who may be rural or residents of low-income peri-urban slums, have electric service that is too unreliable to be useful. Recognizing that electric power is one of the principle inputs for income generating activities, development agencies are increasing their focus on means for improving functional access both in rural and peri-urban areas. At the same time, electric sector restructuring, initiated in the 1990's in an effort to increase efficiency and encourage use of private capital, has increasingly moved the issue of encouraging access into the regulatory arena.

In the days when governments were involved directly in the provision of electric service, decisions to invest in rural and peri-urban electric service could be made using public funds on the basis of social or political goals. The advent of private capital changes the equation from a social

and political to an economic one, and new ways must be found to encourage investment if rural and peri-urban consumers are to obtain and sustain access to electric power.

The Dominican Republic: A Test Case for Restructuring

-Jim VanCoevering, Institutional Specialist-Utility Consulting, NRECA International Ltd. (National Rural Electric Cooperative Association)

Beginning in 1959, responsibility for all aspects of electric service in the Dominican Republic rested with the state owned Dominican Electric Corporation (CDE for its Spanish acronym). By 1997, CDE had extended electricity to almost 80% of the country, but had compiled such a poor record for billing and collection that it could no longer finance construction of power plants. Deferred maintenance had left the distribution system in ruins, and rolling blackouts 12 hours long were not uncommon. Every commercial building, and not a few private houses, had their own generator.

In response to public outcry, CDE was unbundled according to the now familiar restructuring model. Generation and distribution functions were capitalized by selling a 51% share of existing CDE assets to private firms who were responsible for operating the resulting public/private corporations, and a new independent utility regulator, the

Electricity Superintendent (Superintendent) was created to establish tariffs and regulate conditions of service.

The distribution portion of the industry was broken up into three utilities, all containing urban, rural and peri-urban loads. Tariffs for the three utilities were established, not by reference to costs, but were negotiated in the concession contract, with essentially the same tariffs for all three utilities. The tariffs were indexed for changes in the cost of fuel, the value of the Dominican currency against the US dollar and for inflation. Initially, it appeared therefore that the Superintendent's tariff setting job boiled down to calculating the indexation factors each month and adjusting the tariff on the basis of the formulas in the concession contracts. This hands-off approach to tariff setting became untenable when increases in oil prices and currency devaluation increased tariffs to the point that public unrest became unacceptable to the government. Tariffs are now set on the basis of political considerations that result in tariffs well below cost for some consumers, with a balancing account to which the government contributes used to compensate utilities.

CDE left a number of unfortunate legacies, the most important being a culture in which most consumers felt it was their right to steal power. This culture of nonpayment was so ingrained that a whole shadow industry of neighborhood electricians had sprung up, skilled in defeating almost any anti-theft measure devised to date, and operating as a sort of clandestine utility with monthly billing and service guarantees. Following restructuring, the shortage of generating capacity was resolved in short order by private investment in new or upgraded plants, but the matter of losses due to theft and poor collections remained. It was clear that the principal responsibility of the Superintendent was to support the utilities in reducing fraud and theft, and in fact this happened

for a short period. Unfortunately the largest offenders were politically powerful owners of industrial and commercial establishments and the collision of these interests with the utilities caused a retreat on the part of the Superintendent. No significant cases of fraud have been considered in the last two years, and system losses are now almost as high as they were during the days of CDE.

On the infrastructure front, when faced with the colossal investment requirements for system upgrades, the new private utility owner/operators elected to focus their investments on the more lucrative high-income commercial and residential areas. They dealt with the problem of inadequate infrastructure in rural and peri-urban neighborhoods by further restricting service, but the resulting social uproar caused the government to intervene. The government now pays a direct subsidy of 75% of the cost of wholesale power to the utilities in exchange for providing 18 hours a day of service to specified peri-urban neighborhoods (though not the rural areas). The availability of a subsidy that essentially guaranteed payment by a single consumer (the government) of an amount that constituted better cost recovery than was achievable in most normal neighborhoods eliminated whatever interest the utilities might have had in rebuilding the infrastructure. The annual cost of the operating subsidy now approaches \$100 million.

Today, seven years after restructuring, essentially no system improvements have been made in the rural or peri-urban areas, and losses and collection rates are only marginally better than during the days of CDE. Paradoxically, though private investment has provided for the installation of generation capacity equal to almost twice the national peak demand, power outages continue to be a problem. Because the utilities cannot pay for purchased power, generators do not generate,

In countries where sector reform involving utility privatization has taken place, it is regulation that will primarily affect the willingness of private operators to increase access to electricity. Where regulators have been exceedingly weak, as in the Dominican Republic, the incentives for private operators have been poor or non-existent. While the legal power and even the financial resources were there for the government, successive governments have failed to make private operators expand access. Private operators have claimed financial distress due to high levels of fraud and theft; and governments have preferred to exonerate operators from access expansion obligations, and to subsidize distributors for losses related to illegal access, rather than face protests from existing consumers being asked to pay for electricity supply. In the absence of effective checks and balances in the political system, governments in the Dominican Republic have replaced or bypassed regulators at will in order to avoid politically painful measures. Hence, a fundamental challenge for regulation in expanding access is the viability of autonomous and competent regulation.

-Carlos Rufin, Babson College

and the resulting “financial blackouts” are just as pervasive as the capacity shortages of the CDE years.

Other more explicit approaches are necessary. Low interest, long term loans, as are provided by the government of Bangladesh to rural cooperatives, may be sufficient incentive for community based providers, while grants equal to, or in some cases greater than, the size of the investment may be required when dealing with private, profit motivated providers.

Lessons from the Dominican Experience

The experience of the Dominican Republic provides ample regulatory learning opportunities on a number of fronts, but some that are specific to the issue of increasing access to the rural and peri-urban poor are as follows:

Service Provider Structure

The division of the distribution portion of the business into three large utilities, each with rural, urban and peri-urban consumers, was intended to preserve economies of scale but had the effect of encouraging the utilities to focus on resolving problems in the more lucrative areas first. Because returns on rural and peri-urban service can rarely compete with other investment opportunities, successful rural electrification programs tend to establish service providers focused specifically on the problems of rural areas, though the exact ownership structure of the provider does not seem to be so important. Cooperatives have filled this role in Costa Rica, Bolivia, and Bangladesh, but small corporate entities can be equally successful. Even in the Dominican Republic, small privately owned utilities, isolated from the national grid and serving limited rural areas, have established enviable records of low losses, high collections and good service. Though relatively untried as a means of improving peri-urban access, an innovative peri-urban-only supplier in South Africa, organized as a private corporation, is showing that it may be possible. Regulators, through their power of licensing, have the ability to encourage the formation of small service providers and the authority to monitor their performance.

Investment Incentives

Because provision of service to rural and peri-urban areas is not a commercially attractive investment, it is necessary for the state to take some action to promote that investment. In the

Dominican Republic, no explicit investment incentives were created for rural and peri-urban areas, mainly because it was thought that the participation of the government in the capitalized utilities would allow for such social investments. Unfortunately, the nature of the capitalization agreement required that private as well as the public partner agree to make equity investments, with the effect that investments in rural and peri-urban areas were minimal.

Other more explicit approaches are necessary. Low interest, long term loans, as are provided by the government of Bangladesh to rural cooperatives, may be sufficient incentive for community based providers, while grants equal to, or in some cases greater than, the size of the investment may be required when dealing with private, profit motivated providers. In Guatemala, the sole private service provider receives a capital subsidy equal to roughly twice the cost of serving rural residents, while the competitive auctioning of subsidies in Chile has served to limit the subsidy to no more than the capital cost of the project.



Los Mulos, Dominican Republic

The provision of investment subsidies is not normally a regulatory matter, but the truth is that, without adequate investment incentives, it will not matter what regulatory policies are in effect because there will not be any investment and hence little increase in access by rural or peri-urban consumers.

Tariff Setting

The principle authority of the regulator is tariff control, and it is through this authority that the regulator can do the most to either promote or discourage extension of access to rural and peri-urban consumers. The common view, often

espoused by politicians seeking votes, is that tariffs for rural and peri-urban consumers should be lower than for urban consumers, reflecting the lower income levels of the residents. This was the case following the breakdown of the indexed tariff system in the Dominican Republic, where the tariff for the lowest consumption blocks is heavily discounted. Unfortunately, what almost certainly follows is that, in the face of very low tariffs, utilities find minimal incentive in maintaining service to these areas and allow quality to degrade, forcing residents to spend significant sums on alternative energy sources such as kerosene, candles and batteries. In the Dominican Republic, surveys showed that when the cost of these alternatives was included, low-income consumers in peri-urban neighborhoods had the highest effective tariffs of any consumer in the system.

...the most serious offenders are often large industrial and commercial establishments whose politically powerful owners can exert substantial pressure on a regulatory agency to look the other way. If this is allowed to happen, there will be little chance of controlling the infractions committed by smaller consumers.

Tariffs must recover the cost of providing the service while allowing a significant proportion of the community to avail of itself of the service. These conflicting requirements can be resolved either through differential tariffs, internal cross subsidies, operating subsidies, or a combination of all three. Differential tariffs are tariffs that are higher for rural residents than for urban residents, with the differential reflecting the higher rural or peri-urban costs. In Chile, for example rural tariffs are 10-15% higher than urban due to the increased cost of service. Similarly, tariffs for residential consumers served by rural cooperatives in Bangladesh are approximately 20% higher than for urban consumers.

Cross subsidies result from increases in average tariffs to ostensibly recover costs of rural service as part of overall revenue requirement. The result is that urban consumers pay more for their service, while rural consumers receive power at a price below cost. While this may sound like a reasonable approach to the problem, it still creates an incentive to the distribution utility to limit service to rural consumers for whom it knows operating costs are higher than in urban areas.

Operating subsidies, are, as the name implies,

government contributions to offset the cost of service to the target beneficiaries of the subsidies. The best designed of these are still cost based so that they can be sustainable without need for specific cash authorizations. The best example of such a subsidy would be provision at cost of government owned hydroelectric power preferentially for the use of rural and peri-urban residents. Hydroelectric power plants are typically depreciated over long lives and, with minimal fuel cost, have actual out of pocket costs that are considerably less than market rates for power. In the Dominican Republic, approximately 30% of the national peak is met by hydroelectric power, and creative use of such power preferentially could have significant affect on the cost of service to rural and peri-urban areas.

Enforcement of the Electricity Law

A fundamental requirement for the sustainable functioning of any business is the obligation on the part of the consumer to pay for the service they use and the obligation of the vendor to accurately measure the service provided. A primary function of the regulator, one that may become as politically charged as tariff regulation, is the enforcement of the electricity law with regard to theft, fraud, and billing accuracy. As was the case with CDE, high levels of theft and fraud are a legacy of many state utility organizations, and the electricity laws that accompany restructuring uniformly establish these as criminal actions with substantial penalties. However, as in the Dominican Republic, the most serious offenders are often large industrial and commercial establishments whose politically powerful owners can exert substantial pressure on a regulatory agency to look the other way. If this is allowed to happen, there will be little chance of controlling the infractions committed by smaller consumers.

By the same token, utilities cannot be allowed to abuse their billing rights, at the cost of loss of consumer confidence in the entire process. In the Dominican Republic, a private utility operator was discovered to be calibrating its meters to the upper bound of the legally permitted accuracy range. While the economic result of this chicanery was probably not large, the damage to the credibility of the utility was incalculable and resulted in massive loss of confidence in individual consumption metering that has yet to play out.

Clearly, the regulator must be provided with sufficient independence from political pressure and sufficient resources to allow them to respond

forcefully to both sets of problems in an unbiased judicial fashion.

Conclusions

In a world where much remains to be done to ensure access to reliable, high quality electric service, both in un-served rural areas, and nominally served peri-urban slums, the changes in the electric industry represented by restructuring programs present opportunities and challenges for the new regulatory agencies that have been created to implement them. At their best, restructuring programs rationalize markets, attract private investment to expand infrastructure and reduce costs. With proper investment incentives, development of focused service providers, enlightened tariff regulation, and a legal environment that enforces payment and service obligations, restructuring can create opportunities to increase access to service for rural and peri-urban consumers as well.

The NRECA team and Prof. Carlos Rufin have contributed technical assistance to energy sector reforms in a variety of USAID projects in the DR. USAID Contacts: Pamela Baldinger, USAID/EGAT, pbaldinger@usaid.gov, Odalis Pérez, USAID/Dominican Republic, operez@usaid.gov.

The Role of Regulation in Expanding Access to Electricity: Reform in the Philippines

*-Larry Blank, Department of Economics and International Business and Center for Public Utilities, New Mexico State University
-Mk Shean, Principal, International Project Services, Inc.*

The electricity industry in the 7,000 island archipelago of the Philippines is characterized by a government-owned National Power Corporation (Napocor) controlling most of the nation's power generation, a government-owned National Transmission Corporation (Transco) managing the backbone transmission grid, 19 privately owned distribution utilities, and 119 electric cooperative distribution utilities. Electrification in the Philippines falls under two types: on-grid and off-grid. On-grid electrification involves the extension of transmission and/or distribution facilities to customers within the grid system who previously

did not have access to distributed electricity. The responsibility for on-grid expansion primarily falls on the distribution utility within each designated franchise area, possibly in coordination with Transco. Off-grid electrification focuses on the placement of small power generation units and distribution lines in isolated areas and islands. The responsibility for off-grid electrification is typically a joint effort between the Small Power Utility Generation (SPUG) division of Napocor and the local distribution utility that holds the franchise for the area under development.¹

The status of past electrification investments in the Philippines serve as vivid reminders that we must do better. Poor management and maintenance have led to dilapidated networks and excessively high system losses in certain areas. While large amounts of money continue to flow to electrify new areas, many existing electric systems lie in a poor state of repair. The recently formed Energy Regulatory Commission (ERC) has tackled the regulatory challenges of expanding access and simultaneously addressing the degradation of existing rural distribution systems. A shift in policy brought about by the Electric Power Industry Reform Act in 2001 ("2001 Act") stimulated the ERC to significantly alter the regulation related to electrification.

Missionary (rural) electrification can be used as a political tool to win favor from local politicians and people (voters) in areas without electricity. Taking the politics out of electrification is an additional challenge facing ERC. As we will see, the new regulatory construct serves to mitigate biases that may be brought on by politics.

New Policy Enacted by Congress

The 2001 Act contained a number of specific provisions to promote rural electrification. Under the terms of their geographic franchise, Distribution Utilities are required to provide universal service as a social obligation, including to unviable areas. The 2001 Act allowed for the Distribution Utility to transfer the obligation to supply these un-served areas to another Distribution Utility that was better able to provide service without a formal re-definition of their franchise. The Act also allowed a qualified third

¹ Other electrification efforts include the placement of solar-powered battery charging facilities. These efforts have been supported by USAID but are not outlined here given the focus on regulation.

party, who was not a Distribution Utility and did not have a congressionally granted franchise, to provide electric service to such areas.

The 2001 Act recognized one of the barriers to further investment in rural electrification was the existing financial obligation that the electric cooperatives had incurred with previous rural electrification programs. All of the existing financial obligations of the electric cooperatives associated with previous rural electrification programs were assumed by a Government Asset Liability Management corporation. In turn, the rates of the electric cooperatives were reduced, through formal rate proceedings before the ERC, benefiting consumers.

Prior to passage of the 2001 Act, missionary electrification activities were subsumed in the National Power Corporation, with costs hidden from the public. With the passage of the 2001 Act, the development plans and activities, and costs associated with missionary electrification have been made transparent as an explicitly approved component of the Universal Charge. To introduce competition in missionary electrification, the ERC now entertains applications for Qualified Third Parties to provide service in unviable areas.

While large amounts of money continue to flow to electrify new areas, many existing electric systems lie in a poor state of repair. The recently formed Energy Regulatory Commission (ERC) has tackled the regulatory challenges of expanding access and simultaneously addressing the degradation of existing rural distribution systems.

Regulation of Off-Grid Missionary Electrification

The division of Napocor that manages off-grid electrification is the Small Power Utilities Group (SPUG). SPUG now has its separate and distinct unbundled rates approved by ERC. Any subsidies to SPUG require explicit approval from the ERC as part of the Universal Charge. ERC has required SPUG, through the Department of Energy, to prioritize electrification projects and specify the criteria used for such prioritization.

To introduce competition in missionary electrification, the ERC has implemented a competitive selection process whereby new power providers can submit offers for electricity service evaluated based on the following criteria:

- Long-term cost of power and services

- Transparent fuel procurement process
- Environmental compatibility with the local area
- Implementation schedule

This selection process marked a sharp break with the past. Although the ERC established an initial set of guidelines and rules, the details lay in the implementation, and it required several iterations for industry to grasp the full meaning and extent of the change. As of July 2005, however, it can be said that the regulatory policy has finally solidified. In the four years since the passage of the Act, the quality of information presented in filings has improved dramatically, and with that improvement, both the ERC and the industry have gained a clearer understanding of operations. These changes have brought about a significant improvement in regulatory oversight bringing transparency, accountability, and mitigation of the potential for undue political influence and corruption. This is not an improvement that can be easily gauged with a number, but its impact has been profound, and gives hope for sustainable improvements in all segments of the market.

To summarize, the key elements of the new off-grid electrification regulation are:

1. Prioritization of new electrification projects which must be approved by ERC;
2. ERC-approved unbundled costs and rates applicable to off-grid missionary power;
3. A transparent component of the universal charge for subsidization of electrification projects approved by ERC; and
4. A competitive selection process for new power producers.

The ERC Guidelines for the Setting and Approval of Electricity Generation Rates and Subsidies for Missionary Electrification Areas may be downloaded from the ERC website: http://www.erc.gov.ph/pdf/SPUG%20Regulatory%20Guide_final.pdf

Other ERC Regulation Improving Customer Access to Electricity

In addition to the improvements made in the regulation of missionary electrification programs, the ERC has implemented two other changes that serve to enhance both rural and urban access to electricity. First, policy makers in the Philippines acknowledge the unique nature of their electric system, wherein certain customers still do not have access to electricity or have very limited

access due to income constraints. While the benefits of open access are often clear for large industrial customers, the policy makers wanted to ensure that smaller, lower income customers would also benefit from the industry reform efforts. The inclusion of Lifeline Rates was specifically aimed at providing benefits and enhancing access to electricity by lower income households with low consumption patterns. The Lifeline Rates implemented in the Philippines have achieved this objective with up to 50% discounts off electricity bills for residential customers in the lowest consumption brackets. Without this special program, it is likely that many households could not afford electricity. The Lifeline Rate program retains the transparency characteristic important to any subsidized rates.

Improved quality of information cannot be easily gauged with a number, but its impact has been profound, and gives hope for sustainable improvements in all segments of the market.

Second, the ERC has developed a new customer connections policy that makes the costs associated with standard connections transparent and sets forth the rules for new connections. All customers will now pay a standard monthly connection charge that only differs by customer class. Those customers requiring above-standard connections will have to advance those additional cost amounts necessary to procure the connection. This new standard connection charge prevents the cross-subsidization of customers who require special connections. As part of the rules for new connections, customers will now be authorized to self-procure the equipment and construction of the facilities necessary to connect them to the utility system. This form of competition provides a check against excessive pricing by the utilities.

In conclusion, the development of rational regulation promoting investment in and customer access to electricity is the direct result of a few key elements. Success in this endeavor requires the creation of an independent regulatory agency empowered with an overarching policy framework and given the authority to implement that framework. Introduction of competition in the power generation and retail supply functions expands the role of the regulatory agency requiring new "tools" and philosophies to manage in a new market environment. Progress is not rapid, nor should it be, but with a sensible road

map it is possible to travel from where the industry was to where the policy desires it to be. Serious planning and commitment of resources are necessary to make this happen.

Dr. Blank served as the Project Director for Technical Assistance to the Philippine Energy Regulatory Commission from August 2001-04, and continues to serve as a part-time consultant to the ERC. Ms. Shean provided technical assistance to the Philippine Government during development and passage of the Electric Power Industry Reform Act of 2001. She has and continues to advise the ERC on matters related to the implementation of the EPIRA. USAID contacts: Patricia Flanagan, USAID/EGAT pflanagan@usaid.gov, and Rosario Calderon, USAID/Philippines, rcalderon@usaid.gov.

Improving Access to Electricity through Sound Public-Private Partnerships: Central America

-Agustín Giménez and Jairo Gutiérrez, Principal Consultants with PA Consulting Group.

Improving access to energy services along with the need to attract private capital has been one of the main drivers of power sector reform in Central America. When countries in the Central America region began implementing reforms in the mid 1990's, household electricity access ratios were low, on average about 60% for the region (Guatemala, El Salvador, Honduras and Nicaragua, excluding Costa Rica). Today that average is closer to 77%².

In truth, while electricity access rates have substantially improved in some countries in the region, in others they have stalled. Among the countries that have privatized their distribution systems, Guatemala and El Salvador have shown significant progress as revealed by their access ratios of 83% and 81%, respectively. Nicaragua has also privatized its distribution system, however it continues to struggle with the consolidation of its power sector reform process: while the electrification ratio has somewhat increased, it still has the worst household electricity access ratio of any country in the region, reaching only 52%. On the other hand, Honduras has not reformed its

² Data as of 2004: ECLAC, 2005

electricity sector and struggles to maintain its current 66% electricity access ratio.

Our experience suggests that the implementation of market-driven reforms (the creation of a wholesale market for electricity, the vertical unbundling of the industry, the setup of a regulatory agency, and asset privatization) is essential but also insufficient to deliver significant improvements in electricity access to un-served portions of the population in developing countries. In order to dramatically improve access to energy services, the aforementioned measures must be supported by: strong policies, a clear and defined institutional framework, specific and focused regulatory strategies, and proactive government and regulator roles so as to promote regulatory stability and deliver an enabling environment for effective public-private partnerships.



Electrical tower on the edge of Lake Managua

Practical experience suggests that a successful strategy to extend electricity service coverage in the context of a competitive power market must be based upon four fundamental pillars: creating a special fund to subsidize system expansion; establishing a technically sound government coordinating unit; establishing a targeted subsidy policy; and clearly defining the role of the regulator.

Creation of a Special Fund

A special fund or equivalent mechanism is necessary in order to subsidize the expansion of energy services by the private sector in a competitive manner. The fund must be adequately capitalized, deriving from the sale of assets and/or a specific tax, to make it sustainable over time; it must ensure an efficient allocation of resources

according to existing policies, integrated within its national and regional economic development strategy; and it must be administered in a transparent and competitive way. Moreover, as part of a sound institutional framework, it allows governments to leverage additional grants and loans from multilateral institutions and international organizations.

Though the regulator may not take part in the definition, administration, or assignment of subsidies, it must play a key role in providing regulatory instruments offering adequate incentives – and not barriers – for market actors to extend access to new customers.

Guatemala was one of the countries that made a firm commitment to implement an aggressive program with government resources through a trust fund for rural electrification (PER), which was mostly funded by proceeds from the privatization of distribution companies. Guatemala was able to increase its electrification rate from 47% in 1996, a year marked by the new electricity law, to 83% in 2004.

The Government of El Salvador (GoE) created the National Investment Fund for Electricity and Telephony (FINET) as a mechanism to provide subsidies to low income population to facilitate their access to electricity and telephony services. FINET receives and administers financial resources to provide subsidies for the construction and improvement of necessary infrastructure, mostly in rural areas. USAID assisted the GoE to develop the conceptual basis for the sustainable operation of FINET, including mechanisms for administering the funds, establishing priorities, promoting private sector participation, and accessing financial resources from government development projects. As part of this effort, USAID also developed the manual for evaluating and selecting subsidy requests submitted to FINET. This manual included the methodology and procedures for evaluating and granting subsidies according to the priority level assigned to each request.

Technically Sound Government Coordinating Unit

The goal here is to establish a governmental body with sufficient technical capacity to design and develop a long-term, proactive electrification strategy, and the institutional capacity to coordinate its functions with the sector Regulator

and the country's economic and social development strategy.

In the case of El Salvador, USAID assisted to create an Energy Department (Dirección de Energía Eléctrica - DEE) within the Ministry of Economy to assure implementation of the national strategy. This institutional support was instrumental in advancing the liberalization process of the power sector since DEE had a mandate to address the needed energy planning functions in the sector. This included the first ever development of an integrated rural electrification strategy, building upon the participation of the new private investors in the sector and FINET.

In this regard, USAID first completed an identification and evaluation of regulatory barriers (tariffs, quality of service, network engineering) to promote expansion of rural electrification in El Salvador. As a result of this study, DEE was able to move forward to reduce or completely eliminate some of these regulatory barriers. Based on this evaluation, and additional detailed analyses of rules and regulations, USAID funded the development of an integrated rural electrification strategy than included an evaluation of a pilot program testing key aspects included in the strategy developed.

Sound Subsidy Policy

The intent is to have in place a sound subsidy policy, privileging extension of energy coverage over recurring subsidies to consumption for the middle class, and relying on market actors for the development of projects and sustainable management services. The subsidy policy must be aimed at providing electrification to those

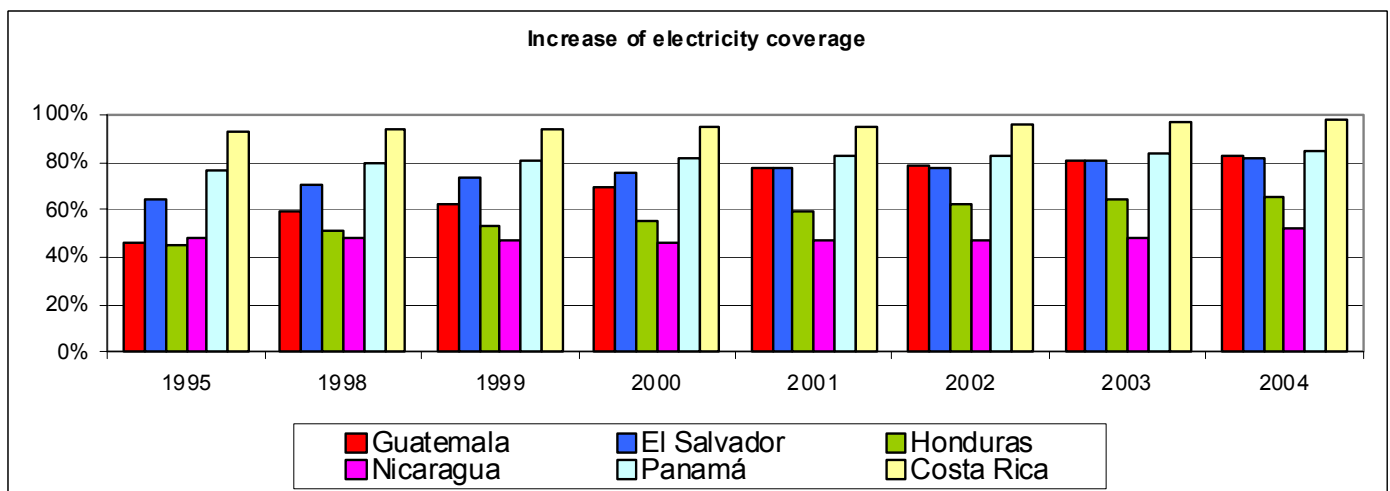
economically targeted areas which power market participants have little or no interest in serving, and it must create conditions attractive enough for the private sector to participate in projects offering adequate profitability.

In El Salvador, USAID funded a strategic effort to measure the impact of changes in subsidies policy. The Ministry of Economy in El Salvador needed to measure the impact of changes in the Government's policy regarding electricity subsidies to the residential sector. This activity evaluated the costs of subsidies under the existing conditions and alternative scenarios. As part of this effort, USAID funded the development of a mechanism to quantify the cost of the subsidies established by the Government, and the development of the initial database used in the analysis. As a result, the subsidy shifted its focus toward lower-income population instead.

Clear Role of the Regulator

The goal here is to establish an active and clearly defined role of the regulator, focusing on adapting tariff design, quality of service indicators, and ability/willingness to pay to potential new customers. Though the regulator may not take part in the definition, administration, or assignment of subsidies, it must play a key role in providing regulatory instruments offering adequate incentives – and not barriers – for market actors to extend access to new customers.

The USAID-funded program developed in El Salvador has contributed to the implementation of regulatory practices that create the necessary credibility and acceptability of the regulator inside and outside the power sector, and provided



support to independence and autonomy of the regulator (SIGET). Within this context, USAID provided tariff related support, evaluating the experience acquired during the first five-year tariff review that took place in 2002. This successful review was accomplished by involving in the analysis all stakeholders participating in this important step in the regulatory process. This effort assisted SIGET in extracting recommendations and lessons learned towards improving regulatory processes and practices, and establishing criteria for resolving future problems. This has increased tariff regulatory stability in the power sector. SIGET initiated a process for its reorganization and strengthening, toward improving its efficiency in the next Tariff Review Process. This effort contributed to the objective of having a power sector regulator establish ground rules that encourage transparency by issuing consistent regulations, and procedures that contribute to a transparent tariff setting process.

In Guatemala, USAID assisted the regulator developing quality of service rules and regulations applicable to electricity distribution and transmission companies. This allowed the regulator to comply with its regulatory function mandated by law, overseeing and monitoring the quality of service delivered to final customers. Under this effort the regulator also received assistance in developing the penalties to be paid by distribution companies that do not comply with quality of service thresholds established in the regulations. This improved transparency of power sector regulatory procedures, and helped final customers to receive a fairly priced service.

In contrast with El Salvador, Nicaragua is an example of how political and institutional crises have distorted the role of the regulator and weakened its capabilities even though the country has significantly advanced the structural reform of its power sector. At issue is the fact that a new multi-sectoral regulatory authority was established, but there was no transition plan developed to smoothly pass from the old scheme to the new one, including the definition of the new regulator. It is perceived that the process for nominating and electing the new regulators has been further politicized. This situation has created opposing views from the Executive and the Legislative powers of the Government on how to proceed. This is occurring in a context where the structural reform implemented in Nicaragua since the late 90's has allowed the private sector to be responsible for a large portion of investment and

expansion of the power system, reducing the burden on government finances. As a result, Nicaragua still displays the lowest electricity coverage rate in the region, some of highest levels of electricity losses, in addition to rotating and frequent blackouts since June 2005.

Conclusion

Ensuring sustainable electricity access mechanisms involves developing and consolidating solid institutions and policies with a long-term commitment, particularly in countries lacking the necessary political, institutional and legal stability.

Indeed, the implementation of market-driven reforms, the creation of a wholesale market for electricity, and the privatization of assets are key elements that alone have not proven to significantly extend electricity access to un-served portions of the population in developing countries. Again, we observe that, in order to dramatically improve access to energy services, reform and privatization must be supported by: sound subsidy policies, a clear and defined institutional framework, specific and focused regulatory strategies and a proactive role of the government and the regulator in delivering an effective public-private partnership.

USAID has played a key role in assisting the Central America region to move forward in improving electricity access by focusing on high priority strategic and operational initiatives in the critical early stages in the path of reform.

With the recent approval of the Central America Free Trade Agreement, expanded access to an efficient, reliable, and competitive electricity supply is essential towards the promotion of investments and economic growth and social equity in the region.

PA Consulting Group has performed this work under two projects, Expansion of the Power Sector in Central America, and previously, Infrastructure Development in Central America under the Increased Central American Participation in Global Markets. USAID contacts: Zoila Letona at USAID/G-CAP, zletona@usaid.gov, or Flor Rivera at USAID/EI Salvador, flrivera@usaid.gov.

An Examination of Pro-Poor Regulatory Design and Stakeholder Participation

Regulatory Design for the Poor

How do utilities and regulators ensure that services target the poor? The pro-poor quandary stems from a need to ensure a financially viable utility, while simultaneously addressing affordability of services for the poor. A substantial amount has been written on ways to reconcile these imperatives from the perspective of the utility. What of the needs of the poor?

Pro-poor policies must be considered directly if this population is to be protected. Unfortunately, regulators generally lack information and expertise regarding the poor and their infrastructure needs. Pro-poor policies require us to know something about the cost to provide service, and the affordability of rates for poor customers in different areas. At what price and service quality will the poor select to purchase the infrastructure services available?

The Asian Development Bank's Conference on Infrastructure Development – Private Solutions for the Poor, held in October 2002, amplified various pro-poor regulatory issues that distinguish themselves from traditional regulatory concerns. Among these are:

- Recognition that the circumstances of the poor are prone to change, therefore, pro-poor regulations must be flexible to respond to their needs.
- Regulation may not always be the best approach, since a competitive market may also generate desired outcomes.
- Competition cannot ensure universal access. "Pro-poor tariff design is therefore inextricably linked to subsidy design." (Public-Private Infrastructure Advisory Facility - PPIAF, 2002:3).
- Quality regulation, whereby services can be differentiated among customers based on needs and cost, may ease subsidy requirements. However, such measures require effective strategies for dialogue with customers.

These and other factors beg numerous questions for the effective formulation of regulations that can promote access and affordability for the poor. First of all, is the regulatory function best handled at the federal, provincial, or municipal level? There are potential benefits and pitfalls in each.

...regulators generally lack information and expertise regarding the poor and their infrastructure needs.

The local level is closest to the target group, and therefore probably in the best position to effectively address their concerns. On the other hand, depending on the degree to which the state has been decentralized successfully, capabilities and financial resources are often stronger at the federal level. Although, there is also a possibility that political capture will taint the independent regulator. PPIAF offers two solutions.

Peppering regulatory functions refers to analyzing which governmental bodies can best serve in the required capacities, and delegating responsibility across multiple levels of government accordingly. Alternatively, creating a *Sunshine Regulator* refers to bestowing regulatory oversight within a federal agency, to add transparency to local regulatory functions. PPIAF advocates that a mixed approach may be the best in order to effectively reach the poor. South Africa, for example, has national regulators for key sectors, while municipal regulators handle multiple sectors.

The institutional requirements for providing subsidies, for example, are an area for special deliberation. Subsidies are generally driven by socio-political calculations, while regulators are concerned to ensure the continued financial and technical viability of utilities. If the regulator has authority to issue licenses, then this function will need to be analyzed within the context of the subsidy delivery mechanism. It may be inappropriate to vest the regulator with subsidy setting and monitoring responsibilities, but establishing a subsidy delivery agency may cause problems related to coordination and overlap.

Latin America provides many examples of how political expediency drove tariffs for infrastructure services before the privatization wave swept across the region during the 1990s. Indeed, it is worthy to note that pre-privatization, the share of urban poor with utility access was trending downward, and service quality was also worsening. However, in a Discussion Paper from

the United Nations University, Cecilia Ugaz argues that privatization has still not fully addressed utility provision, with weaknesses particularly in the areas of competition and regulatory transparency (Ugaz, 2002:1).

...with their emphasis placed on attracting investors, governments tended to draft regulations geared toward investors and their interests, as opposed to all stakeholder interests, such as consumers and government itself.

In the first instance, one should recall the original motivations behind utility privatizations in Latin America, which emphasized the needs of the state and utilities, with less careful consideration for customer needs. It was broadly accepted that state run operations were inefficient, and that public resources simply could not support the service and network upgrades necessary to maintain and improve access and quality. Simultaneously, investors were showing substantial interest to capitalize on the new opportunities being offered by liberalization throughout the world.

With this backdrop, governments created the necessary institutions to attract investment and shed the responsibility of providing various infrastructure services, from electricity to water to telecommunications, and beyond. However, with their emphasis placed on attracting investors, governments tended to draft regulations geared toward investors and their interests, as opposed to all stakeholder interests, such as consumers and government itself.

The resulting privatization framework did not always work. As Ugaz explains,

Some policy interventions aiming to increase access to services were embedded in privatization deals and enforced through regulation—e.g. the imposition of investment targets, and universal service obligations. These interventions address the problem from the supply side, providing utility operators with incentives to expand the network. However, the problems on the demand side—preventing users from connecting to services (affordability) or forcing them to live in areas where connections are not enforced (relevance/fit)—remain mostly unsolved. (Ugaz, 2002:2). Indeed, privatizations of electricity, water, and telecommunications in Argentina, Bolivia and Peru all led to revised pricing structures, whereby the fixed cost to the consumer rose and the per-unit

cost declined. This pricing clearly hurts poor consumers and demonstrates a regulatory failure to protect the poor.

The Role of Civil Society

Among the broad set of stakeholders interested in utility regulation—government, private operators, and consumers—the latter embodies the most disparate group, who therefore face greater challenges in affecting policy decisions. Ugaz argues that, in order to be a public good, regulation needs to be designed as such. This means preventing regulatory capture and engaging civil society so that regulation enjoys widespread acceptance and universal treatment.

The question of who represents consumers presents unique challenges. Civil society organizations often serve to inform the public, conduct data collection and analysis, extend policy recommendations, as well as perform monitoring or watchdog functions. Different organizations represent different interests and opinions, but all of these can infuse the debate with innovation and thought leadership. On the other hand, some organizations have the capacity to threaten progress through protests and the mobilization of mass opposition. At their best, civil society organizations help private companies operate responsibly, within the cross-section of their own interests, those of their employees, and of consumers and government.

At their best, civil society organizations help private companies operate responsibly, within the cross-section of their own interests, those of their employees, and of consumers and government.

One important distinction should be made between local civil organizations and regional or international ones. One might argue that consumer representation should generally come from the same physical scope covered by the operator, as this is the affected public. However, there can be pros and cons to outside intervention. Funding sources for the organizations may suggest biases or dependence from the state, which may diminish their credibility as viable consumer representatives. On the other hand, smaller civil organizations may not have many alternatives for funding. Such organizations have themselves transformed greatly in the last decade, and their roles and prominence have increased in many ways. More remains to be done to

appropriately harness this energy and channel it most effectively, as well as learn from the various successes and failures within their sphere of operation.

A critically important challenge in creating a regulatory agency is determining the make-up of the board, and the methodology to institutionalize consumer participation. It is also important to distinguish between three different forms of participation: consultation, representation, and influence (Ugaz, 2002:10). They signify an increasing level of responsibility bestowed upon the consumer. Consultation refers to participation in the exchange of ideas and information; representation refers to a more formalized process for consumer involvement in decision-making; and influence refers to a dedicated space for consumers to directly affect policies and decisions.

Ugaz argues that consultation may not be as effective as appointing a consumer representative to the regulatory board. First, experience shows that there is no standard period of consultation across different countries. Broad consultation also may do little to prevent capture, since it does not lead to the same level of transparency as occurs with a consumer representative. As Ugaz puts it, "the presence of consumer representatives increases the cost of lobbying for the firm" (Ugaz, 2002: 10).

Along with the usual challenges of incorporating stakeholders and entrusting them with sufficient influence within the process, as in any stakeholder participation context, the utility sector poses an additional technical complication—consumers, and particularly poor consumers, generally lack sufficient technical understanding to credibly contribute to service planning solutions. The real danger for developing countries is for the participatory process to confirm and preserve a balance of power favoring operators.

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The Regulator's Role in Promoting Electricity Access: Perspectives from NARUC

- Jason Czyz, Deputy Director of International Programs, NARUC (National Association of Regulatory Utility Commissioners)

In most developing countries, the electric utility regulator has played little if any role in promoting access to electricity and rural electrification. This is certainly true for most of Africa. In Eastern Europe, by sheer political will the communist governments built a robust electricity system well before regulatory bodies. In Bangladesh, electric cooperatives were set up and began operating as early as the late 1970s, but the regulatory body did not come into existence until 2004. In the United States, the federal government and local communities were the main drivers behind rural electrification, combining local initiative and local governance with federal government financing and oversight. Indeed, with some exceptions, regulators have not been involved with the process of promoting access to electricity in most areas of the world.

Is there a reasonable explanation for excluding regulators from promoting access to electricity? Historically, and depending on the economic, political, and social situation in a country—the answer is a resounding yes. Utility regulators are economic referees. If an instrument, such as a cooperative, can displace the need for a referee by removing the profit requirement (even if it must still break even), and divert the focus primarily to service, so much the better for the local community.

However, the success of the U.S. model has not been replicated as easily as one might assume. It is important to note some key differences in the circumstances surrounding efforts to increase access to electricity in the developing world:

- Many developing countries do not have enough generation capacity to serve their current load in urban areas.
- Their utilities in the urban areas are often owned and operated by the government and

are economically inefficient, a drain on government resources and therefore a drain on investment resources.

- Adding to the previous point, commercial and technical losses are high on the existing network, and revenues are often insufficient to cover maintenance expenses.
- The majority of the funding is not coming from within the country, but rather from the donor community.

Private sector investment could potentially infuse the sector with needed capital and management skills. However, with profit becoming the driver, effective regulatory tools become key to meeting development objectives. Regulators in developing countries are potentially in a strategic position to improve the electricity system, and expanding access to electricity could become a significant role. Here are some key areas where regulators should become involved in regards to rural electrification and access to service:

- Promoting efficient use of resources and sound economics (such as making sure that utilities and cooperatives focus on serving as many customers as possible in an already existing service territory rather than trying to continually build out—"back filling").
- Promoting the efficient use of limited generation resources and the use of alternative energy sources (this can be done through the rule making process, creating incentives, rational cross-subsidization, etc.).
- Supporting utilities and cooperatives in combating theft and non-payment.
- Promoting the participation of local communities.

These are just a few areas where regulators need to play a stronger role and have the authority to issue enforceable rules.

To do so however, regulators will need to overcome several obstacles. These include their lack of legal and de facto authority, lack of human resources, and lack of political independence. There are varying degrees of effective regulators around the world, but in some countries the regulator can even be said to contribute to the

challenges and inefficiencies listed above. To effectively deal with access to electricity, regulators will first need to overcome these challenges.

Money, equipment, expertise and other resources can be poured into rural areas by the donor community, but this approach will be unsustainable without having in place a strong regulatory agency that can ensure that these resources are properly utilized and maintained.

On the broader policy level, the fundamental fact remains that a regulator is not going to be able to encourage an improvement of service in rural areas until the regulator is effective in combating some of the challenges in urban areas. Capital, in this capital-intensive industry, is a scarce commodity for developing countries both in urban and rural areas. The political reality is that most governments are more likely to focus on their country's urban areas, which are typically their base for political power. Money, equipment, expertise and other resources can be poured into rural areas by the donor community, but this approach will be unsustainable without having in place a strong regulatory agency that can ensure that these resources are properly utilized and maintained. The effort being invested into increasing the effectiveness of regulatory agencies is minimal, although an effective regulatory agency is the lowest cost option for encouraging sustainable access to electricity.

What would happen if the regulator were responsible for increasing the number of connections and areas of service (through the typical regulatory tools of encouraging performance—not by managing the company or cooperative)? Would this be a proper role for the regulator? Would the regulator be able to step somewhat outside of its traditional role and engage local communities to overcome a lethargic (or distracted) central government? Could the regulator play an effective role in ensuring the sustainability of a rural electrification/access to electricity program? All of these questions can be answered in the affirmative, but this requires more support for regulators than simply making the creation of a regulatory body a condition of a loan or some other type of support. The effectiveness of the regulator should be the first goal if sustainability of any rural electrification/increased access to electricity program is the primary goal.

AFREPREN Workshop Emphasizes Electricity Access in Africa

The United Nations Environment Programme headquarters in Nairobi hosted the Regional Workshop on Electricity Access and Development Challenge in Africa on 13-14 July 2005. Organized by the African Energy Policy Research Network (AFREPREN) Nairobi, program sponsors included the Global Network on Energy for Sustainable Development (GNESD), U.N. Development Programme, U.N. Environment Programme, and International Energy Agency. Approximately 150 participants met with the objective of engaging regional policy makers in applying the GNESD energy access recommendations to their local context with the expectation of creating a sense of local ownership of the policy recommendations emerging from GNESD. The workshop highlighted the issue of electricity access, particularly among the poor. Attendees included representatives from energy ministries, power utilities, regulatory agencies, donor agencies, banking and finance groups, universities, private sector companies, civil society organizations, as well as experts in energy, environment, engineering, technology, and other areas.

In his opening remarks, UNEP Executive Director Klaus Töpfer noted that “*Conclusions are quite clear that while reforms have made some progress in improving efficiency, they have often had quite negative effects on the poor.*” One important barometer has been the extent to which the needs of the poor were an explicit goal in the reform.

The four central technical sessions were (1) Electricity and Development; (2) The Dual Challenge; (3) Energy and MDG Challenge; and (4) Working Group Presentations. The workshop set aside significant time to discuss electricity access issues, including its linkage to national economic development. The Working Groups discussed the following three topics:

Group 1: Policy and regulatory options for enhancing rural electrification within a reforming power sector

Group 2: Policy and regulatory options for increasing electricity access while ensuring financial viability of electricity distribution utilities

Group 3: Policy and regulatory options for enhancing electrification through private investment

The participants noted that electricity access by the poor is generally a low priority among power sector reform agendas. Some of the policy recommendations made to increase access in Africa were the provision of electricity at commercial and community load centers in Zimbabwe; the use of social tariffs in Mozambique; the promotion of mini-grids based on local resources and electrifying district centers in Tanzania.

The group also discussed how local SME involvement could support power sector reforms in Africa. Because SMEs represent such an overwhelming part of the economy in most developing countries, including SMEs can assist to expand access and thereby strengthen these firms. To foster such involvement, SMEs need to be able to navigate transparent regulations related to licensing, dispute resolution mechanisms, regulatory enforcement, etc. Below are some of the policy recommendations made by workshop participants to facilitate SME involvement:

- Provide model contracts and agreements specifying minimum performance criteria, penalties, etc.
- Employ alternative delivery mechanisms such as electricity co-ops, community projects, and local companies.
- Promote pre-payment options
- Explore alternative funding arrangements for non-conventional electrification.

Participants also agreed that rural electrification will continue to be hampered as long as utilities are not financially healthy. Therefore, they proposed policy options that have worked to enhance rural electrification without negatively impacting a utility's financial performance. Some of these include:

- Cost-recovery based tariffs, with surplus reinvested into a Rural Electrification Fund, given on competitive bidding, as done in Uganda
- Generation levy to fund a rural electrification program, as done in Uganda and Kenya
- Parallel lines (HT, LT) for the same village, HT for agriculture and LT for domestic and small enterprises, as done in India.
- Credit to consumers to pay connection fee in installments

This is not a USAID funded activity, but we have included this summary since it is in line with USAID development goals, and it relates to the theme of this issue. For more information, including the full agenda, participant list, presentations and proceedings, please visit the workshop website: <http://www.afrepren.org/gnesdworkshop.htm>.

Feature Article

Regulation by Licensing and Performance Benchmarking: What to Do When Traditional Tools Aren't an Option

-Joan Ablett, International Resources Group

When governments begin the process of sector regulation, they often want a gradual transfer of regulatory authority in order to minimize political impact and the need for major new legislation. Although that may make good sense from a ministry's perspective, it leaves the technical assistance consultant with a conundrum. "How to build an effective regulator without traditional regulatory tools?"

In 2003, the United States Agency for International Development (USAID) asked International Resources Group (IRG) to undertake just such a task in the Egyptian Electricity Regulatory Agency. The objectives were clear: Absent a strong legal basis, take whatever steps possible to build an effective and sustainable regulator. A three-pronged strategy was launched with the intention of first providing a legal and regulatory framework that would strengthen the institution in the medium term. IRG worked with the Government of Egypt to draft a law that gave the Egyptian agency traditional regulatory tools and procedures. Draft rules and secondary regulations that incorporated many of its elements also strengthened the existing regulatory framework. The second prong - a series of recommendations for transitional market and power pool designs - was based on the model employed by aspiring European Union member states.

These steps were long-term fixes so immediate improvements in performance and customer service required other approaches. Therefore, to attack the immediate problem of regulating without traditional tools, IRG next suggested leveraging the regulator's existing powers to monitor licensees. Having designed these powers, they knew them to be comprehensive enough to serve the purpose. Using an approach called "Regulation by Licensing", they developed a License Management System (LMS). At the heart of the LMS is a sophisticated benchmarking program linked to a performance measurement scheme. It allows the regulator to motivate licensees to improve not only technical and financial performance, but also customer service.

The Egyptian Electricity Agency uses the LMS to manage the data that licensees provide and link all

aspects of the regulatory process (licenses, tariffs, contracts, performance measurement, codes and standards). To analyze that data in light of best international practices, the Agency developed a series of indicators of financial, technical and customer service performance. With established benchmarks, future performance can accurately be measured and compared. The LMS gives the Agency the ability to reward a licensee's good performance (or penalize a poor one) through individually negotiated agreements.

Successful US-Egypt Twinning

Under two successive USAID projects, the Egyptian Regulatory Agency has benefited from twinning relationships with regulators in the US and the region. Customer service and consumer protection have been one focus of these twinning discussions. Most recently, a US customer service expert from a US state regulatory commission provided advice on the organization and operation of a customer service unit and a customer service call center, and with Egyptian counterparts drafted an "operations manual" for the Agency's customer service unit. Other ongoing activities include specification of the hardware and software needs for an Agency call center; a site visit to an Egyptian distribution company's customer service unit was also undertaken.

Other data from the licensees are now being incorporated into a model that calculates company-specific cost of service information.

The existing legal framework does give the regulator the power to improve customer service. To date, it has promulgated a customer service charter, begun monitoring customer service activities within each licensee and, within the regulatory body, installed its own customer service unit.

It is clear that in the long run, a strong and independent regulator requires a strong legal framework within which it can do its job. But high quality regulation need not always await enactment of a proper and robust law. Each of the activities described above demonstrates that even a legally weak regulator can conduct effective regulation if it takes careful stock of the tools and techniques that can be brought to the task, and uses them with care and deliberation.

USAID Contact: Mamdouh Raslan, USAID/Egypt, mraslan@usaid.gov.

Notes From The Field

USAID Delivering Electricity and Trust to Zambia

Created in 1995 under the Energy Regulation Act, the Zambian Energy Regulation Board (ERB) operates with the mission “to regulate the Energy Sector in a transparent, effective and efficient manner that safeguards the interests of stakeholders.” Providing independent oversight of the energy sector, safeguarding stakeholder interests, and facilitating the improvement and expansion of service provided by the Zambia Electricity Supply Corporation (ZESCO) has proved difficult without a solid foundation of mutual understanding and public support.

To assist, USAID has been supporting energy sector reform through public outreach and participation. After an extended process of community dialogue and policy inputs, the Zambian Electricity Consumer Charter will soon be launched. For Zambia, this marks the first time that regulatory or utility representatives have directly solicited feedback and input from local consumers regarding electricity service and consumer rights.

ERB and ZESCO held two series of public meetings throughout Zambia’s nine provinces. Stakeholders from subsistence farmers to industrial users and civil society organizations came together to discuss the Charter. The final version will be translated from English into seven local languages, and displayed at pay points throughout the country. The Electricity Consumer Charter of Zambia clears the way for the transition to a more commercialized energy sector with improved service delivery, billing, payment, and grid extension. Contact: Kevin Warr, USAID/EGAT, kwarr@usaid.gov. This work is being carried out with the Academy for Educational Development.

Rwanda in Process of Improving Electricity Reliability

In May, USAID assisted the Rwanda Utility Regulatory Agency and Electrogaz, the leading national private power producer to develop an automatic fuel price adjustment mechanism. The increased transparency of Electrogaz revenues secured a \$24.39 million World Bank loan for the Rwanda: Urgent Electricity Rehabilitation Project, aimed at rehabilitating Rwanda’s severely damaged grid system. Contact: Kevin Warr, USAID/EGAT, kwarr@usaid.gov. This work is being carried out with CORE International.

South Asian Energy Initiatives Focus on Reform and Regulation

The South Asia Regional Initiative/Energy (SARI/E) has been working closely with the South Asia Forum for Infrastructure Regulation (SAFIR), particularly for training. Regulatory concerns in the South Asia region share a focus on making the sector more efficient and capable of serving ever-expanding energy needs. South Asian countries are taking strides to create stronger regulatory bodies and understand energy access deficiencies through more dynamic information exchange. In one recent program, Bangladeshi regulatory officials visited the U.S. to learn about best practices. Upon returning home, they held their first public hearing and are now finalizing a license regulation. Licensing the regulated entities will be the first official act of the Bangladesh Energy Regulatory Commission (BERC), and will provide the foundation for the Commission’s oversight of Bangladesh’s energy sector. The licensing fees will provide BERC with its operational revenue, thereby making the Commission independent of government funds. Separately, in Sri Lanka, technical assistance and training programs have helped to develop the legal and regulatory framework for power sector reforms, while also seeking to ensure the independence of the Public Utilities Commission. Contacts: Robyn McGuckin, USAID/India, rmcguckin@usaid.gov, Kevin Warr, USAID/EGAT, kwarr@usaid.gov, Ellen Dragotto, USAID/EGAT, edragotto@usaid.gov. This work is being carried out with the National Association of Regulatory Utility Commissioners, Institute for International Education, and Nexant.

Improving Rate Making and Consumer Protection in South Asia

Under the SARI/Energy Regulation Partnership, 20 executives from South Asia, including Secretary P. Weerahandi of Sri Lanka's Ministry of Power & Energy, met in New Delhi to discuss consumer rights, dispute resolution, rate setting, and working with utilities. Some of the outcomes included: The Indian participants agreed to meet with Sri Lankan counterparts and trade unions who are opposed to reforms; participants agreed to begin drafting objectives and a charter for a South Asia Regional Regulatory Association; participants agreed to create an award program for outstanding efforts toward regulation reform in the region. Contacts: Robyn McGuckin, USAID/India, rmcguckin@usaid.gov, Kevin Warr, USAID/EGAT, kwarr@usaid.gov, Ellen Dragotto, USAID/EGAT, edragotto@usaid.gov. This work is being carried out with the U.S. Energy Association.

Expanding the Reach of Regulatory Capacity throughout Africa

The African Forum for Utility Regulators (AFUR), a continent-wide association for energy, water, and telecommunications regulators, strives "to facilitate the development of effective utility regulation in support of Africa's socio-economic development." AFUR is partnering with USAID to help expand its membership and promote its role in regulatory affairs through the development of an institutional assessment and crafting of a communications strategy. Contact: Kevin Warr, USAID/EGAT, kwarr@usaid.gov. This work is being carried out with the National Association of Regulatory Utility Commissioners.

SMART Objectives Help Reduce Blackouts in Bangladesh

USAID is implementing a Change Management Program in the publicly managed Power Grid Company of Bangladesh (PGCB) in order to improve performance and reliability. By working with all employees in its design, the program was endorsed by its staff and labor unions, reducing the typical resistance to change during restructuring. In only 18 months, the program has yielded operational profits, savings in maintenance, and increased quality of service, resulting in reduced black outs in Bangladesh. Contact: Ellen Dragotto, USAID/EGAT, edragotto@usaid.gov. This work is being carried out with the Institute for International Education.

SMART Objectives Achieved

(Specific, Measurable, Achievable, Realistic and Time Bound)

- Reduction of power interruptions from 154 to 99 from 2003 to 2005
- Reduction of consumption to 16 Mw in 2005 from 35 Mw in 2003
- Voltage improvement targets achieved
- Transmission system losses reduced from 3.9% to 3.48% in 2 years
- Return on net asset in 2004 was 6.27%, nearly double that of 2003
- Likely to be certified ISO 9001/2000 by December 2005

Policies for Sustainable Energy Solutions – Geothermal Power Development in the Eastern Caribbean

The Eastern Caribbean Geothermal Development Project (Geo-Caribbean) was recently launched to overcome the barriers to development of geothermal energy in the Eastern Caribbean. Dominica, Saint Kitts & Nevis, and Saint Lucia all possess world-class geothermal resources. Each country also faces critical electricity supply challenges, with prices among the highest in the world (approaching US\$0.30/kWh). Among the barriers to

such development is the lack of appropriate policies and regulations to attract competent commercial developers. In this effort, USAID catalyzes larger investments and creates partnerships among multiple donors. Primary funding of \$8.2 million comes from the Global Environmental Fund of the U.N. Environment Programme, with additional support from L'Agence Française de Développement. Contact: Patricia Flanagan, USAID/EGAT, pflanagan@usaid.gov. This work is being carried out with the Organization for American States.

Recent Events

Gordon Weynand Elected to Global Village Energy Partnership (GVEP) Board of Directors

Gordon Weynand, Energy Team Leader of USAID/EGAT/I&E was recently elected to the GVEP Board of Directors. He filled one of approximately six vacated Board seats. Some of you may know that Griffin Thompson of the U.S. Department of State, and formerly of USAID, occupied one of those seats over the past two years.

Calendar

The first Global Village Energy Partnership (GVEP) Partners Assembly will be held October 20-21, 2005 at the Blue Tree Hotel in Brasilia, Brazil. This meeting will be held in conjunction with a one-day Brazil seminar on the Luz para Todos program - Light for All - held on October 19, to which all GVEP Partners are invited to attend. The Brazilian Ministry of Mines and Energy is co-hosting the three-day event in conjunction with the GVEP Partner Board. For more info on these two events and other GVEP info, please go to <http://www.gvep.org/>.